

Progress Maschinen & Automation AG, 39042 Brixen, Italy

Automated bending and installation of cooling and heating pipes

In the field of circulation technology, automation is advancing in a completely new range of application - pipe bending and installation for concrete core-activated precast concrete elements. The Tube Master pipe-laying robot from Progress Maschinen & Automation, a Progress Group company, was newly developed and installed for the Austrian market leader Mischek Systembau. It already exceeds the set output targets after only a short operation period.

Prefabrication is becoming increasingly important

As the name Systembau already suggests, Mischek aims to offer the highest level of quality, schedule and cost security in project realisation. With precast concrete elements, a quality-checked and on-time implementation is guaranteed. The company is convinced that prefabrication is a solution to two challenges: advancing urbanisation and the acute shortage of skilled workers. Urbanisation is creating a growing need for affordable housing. Industrial prefabrication also creates less construction-related pollution with less noise, dirt and traffic restrictions. As the increasing shortage of skilled workers is causing problems for many companies, this points in the direction of prefabricated system construction.

Automating pipe laying makes sense

The shortage of skilled workers is pushing the economy more and more towards automated processes and, as a result, automation shall facilitate more efficient production in the plant as well as on the building site, e.g. through shorter construction times or the separation of different trades. As the demand for concrete core-activated components in projects in Viennese building construction grew over time, Mischek began laying the heating and cooling hoses in the precast slabs with in-situ topping by hand some time ago. With manual installation, it was becoming impossible to achieve the quality and required production speed. This combination of growing demand and limited production capacity led the company to the investment decision.

New development Tube Master - in operation for the first time in Gerasdorf near Vienna

The automatic installation process significantly reduces the risk of kinking and possible damage to the hose/pipe, which can occur quite often with manual work. The exact positioning of the pipes as they are placed on the pallet requires very



In the spirit of sustainability, photovoltaic systems and a woodchip heating system were installed at Mischek Systembau.



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The installation of the new automated system was carried out during ongoing production and convinces with a daily output of up to 300 m².

little necessary rework, such as securing the pipe to the pallet, and therefore allows for faster process speeds with reduced labour costs. Through simulation, the product can be tested even before the start of production and, if necessary, it can be adjusted and waste can be avoided. The precast concrete elements equipped with it are more energy-efficient, have a high thermal capacity and, due to their size, manage with very low flow temperatures.

“Even though the Tube Master was a one-off for a precast plant at the time, it was also important for us that the new robot could be integrated into an existing circulation plant for semi-finished concrete parts - with minimal restrictions during ongoing production operations.,” says BM.DI.(FH). Mathias



The Tube Master was specially developed by the Progress Group for bending and installation of tubes within precast concrete element production.

Tabor, technical division manager and managing director of Mischek Systembau.

The Tube Master currently operates in three shifts from Sunday 10pm to Friday 10pm with a daily output of up to 300 m². Already in the first full year of production, the self-set output targets were far exceeded. The order books are already very well filled into the autumn.

Progress Group - the right partner for new development

As the existing circulation plant had already been supplied by Progress Group, those responsible at Mischek trusted Pro-



The system can lay pipes directly on the already inserted reinforcement and replaces tedious manual work.

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The new development was installed for the first time in Gerasdorf near Vienna. Seen here during the test in the Progress Group hall.

gress to meet the technical challenges of this prototype with their know-how in a very short time and within budget - and with the renowned quality and reliability. "In short, Progress is top-notch," adds Managing Director Tabor, commenting on the successful collaboration: "The company impresses with its top personnel, the existing decades of experience, knowledge and expertise, as well as the handshake quality of the people involved."

Progress Group's mission is to create better living conditions for people in a sustainable way. The group of companies specialises in machines and software for the automation of precast concrete element production and operates its own precast plant at the company headquarters in Brixen. ■

Mischek Systembau - a subsidiary of Strabag AG

Precast elements have been produced at the production site in Gerasdorf near Vienna since the end of the 1960s. Mischek Systembau has been part of the Strabag Group since 2004 and has been modernising the plant and opening new production lines for almost 20 years now. Solid prefabricated parts, special prefabricated parts and semi-precast elements such as double walls or precast slabs with in-situ topping are produced here. As a subsidiary of Strabag, Mischek currently supplies these products exclusively to multi-storey residential building projects in the Vienna and Lower Austria area, which are implemented by GU-Bau. The clients include well-known public and private developers.

Strabag is a European technology group for construction services, leading in innovation and financial strength. The offer includes all areas of the construction industry and covers the entire construction value chain. With a dense network of numerous subsidiaries in many European countries and also on other continents, Strabag is expanding its area of operation far beyond Austria's and Germany's borders. Together, in alliance with strong partners, they are pursuing a clear goal: to plan, build and operate in a climate-neutral and resource-saving way.



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FURTHER INFORMATION



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